



# **VACCINE HESITANCY**

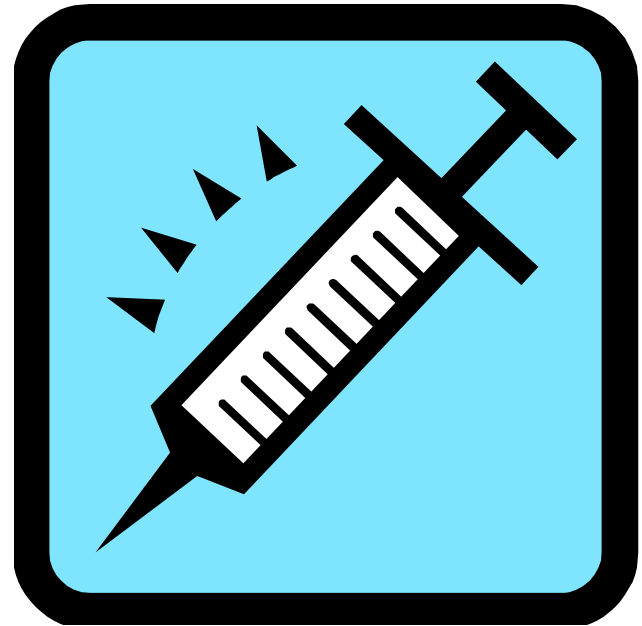
## **AN OFFICE VISIT DILEMMA**

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# to Vaccinate or not to Vaccinate

- That is the question





The real reason why parents  
don't vaccinate:

**FEAR**

The real reason why parents  
don't vaccinate:

**TRUST**

# We have heard it all:

- “Because vaccines can cause Autism.”
- “Because we give too many shots and they are overwhelming the Immune system.”
- Because I did my research on “Dr. Google” or “Google University”.
- “Because of my religious beliefs” (like: “I’m catholic”)
- “Because my friend told me not to”



# We try to prevent harm, injury and disease in our daily lives, by:

- Eating the right foods and exercising
- Wearing helmets and protective gear when playing sports, riding bicycles, motorcycles, etc.
- Wearing our seat belts, placing our infants and children in safe car seats and booster seats and obeying traffic laws.
- **Vaccines are one such preventative measure.**

# Prevention

- ◉ We do believe in prevention, otherwise we wouldn't do those things, right?
- ◉ When speaking to parents, they need to relate to what you are trying to explain by using analogies that they may understand.
- ◉ So, one of those analogies is:

# CARS





# Prevention of injury or harm

- We treat our cars better than we treat ourselves
- We make sure we buy the safest car available
- We follow the manufacturers instructions for maintenance and safety
- We buy the safest car seats for our children

# Henry Ford



# Ford Model T

- Henry Ford pioneered the automobile assembly line production in Detroit, MI
- First affordable automobile made in the USA
- Mass produced from August 12, 1908 until May 26, 1927. 15 million cars were made.
- A visionary for his time.

# Ford Model T

- “ I will build a car for the great multitude. It will be large enough for the individual to run and care for. It will be constructed by the best materials, by the best men to be hired, after the simplest designs that modern engineering can devise. But it will be so low in price than no man making a good salary will be unable to own one – and enjoy his family the blessing of hours of pleasure in God’s great open spaces”

# First accident



# Horse and Buggy





# Traffic light



# Traffic cops





# Seat Belts



# Early seat belt facts:

- Used in cars as early as the 1900's, but not to protect occupants in case of a crash, but to keep them in the car.
- 1<sup>st</sup> added to airplanes to keep pilots seated during vertical maneuvers
- In the 1920's seatbelts were a standard feature in racing cars.

# Ralph Nader



# Ralph Nader

- In 1965 published “Unsafe at any speed: The Designed-in Dangers of the American automobile”
- In 1966 Congress passed the Highway Safety Act and the National Traffic and Motor Vehicle Safety Act, making seat belts a standard feature in all cars produced.
- However it was not a federal law to mandate wearing the seat belts.

# Ralph Nader

- New York State was the first state to pass seat belt laws in 1984.
- In 1994, North Dakota was the last state to pass this law.
- Arizona (RI, AK, AL) it was... 1991
- CDC and Prevention reported seat belt use increased from 11% in 1981 to 68% in 1997.
- Death decreased from 21.49 to 15.69 per 100,000 people in those same years.

Seat belts are safe:



Seats belts are safe:



Seats belts are safe:





Seats belts are safe:



# Automobile analogy

- Cars have gone through a lot of scientific trial and error.
- Newer safety measures are always being developed.
- We have come to trust automobile manufacturers and their safety measures.
- We follow (most of us) the laws that are required in our state.
- Therefore we have moved from Fear to Trust

# So, why use the car vs. vaccine analogy?

- By having the safest car available you are anticipating that you are potentially preventing harm for you and your family.
- Because if you didn't believe in prevention, you wouldn't consider:
  - Buying the safest car
  - Wearing your seat belts.
  - Putting your children in their car seats, and
  - Obeying all traffic laws.

# So, why use the car vs. vaccine analogy?

- By giving vaccines , you are protecting your children from harmful and even deadly diseases.
- Just like safe cars, vaccines will protect us from harm.
- Car manufacturers continue to improve the safety of our cars.
- Vaccine manufacturers have ongoing research and development to ensure the safety of vaccines.

# Vaccines

- Vaccines are the single most effective medical measure invented by man to prevent disease.
- Vaccines have become safer over time as a result of continuous testing and scrutiny.
- There is ample clinical evidence of vaccine efficacy.

# PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

## **Addressing Parents' Concerns: Do Multiple Vaccines Overwhelm or Weaken the Infant's Immune System?**

Paul A. Offit, Jessica Quarles, Michael A. Gerber, Charles J. Hackett, Edgar K. Marcuse, Tobias R. Kollman, Bruce G. Gellin and Sarah Landry  
*Pediatrics* 2002;109;124  
DOI: 10.1542/peds.109.1.124

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/109/1/124.full.html>

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# Historical perspective and Number of vaccines given from 1900 to now

- In 1900..... 1 vaccine given: Smallpox
- In 1960..... 5 vaccines given: Smallpox, Diphtheria, Tetanus, Whole cell Pertussis and Polio (Inactivated)
- In 1980..... 7 vaccines given: DTP, Polio (live attenuated) and MMR
- In 2000.....11 vaccines given: DtaP, MMR, inactivated Polio,HIB, Varicella, Pneumococcal and Hepatitis B series.

# Possible number of injections by 2 years old:

- In 1900.....1
- In 1960.....8
- In 1980.....5
- In 2000.....20



**TABLE 2.** Number of Immunogenic Proteins and Polysaccharides Contained in Vaccines Over the Past 100 Years

1900		1960		1980		2000	
Vaccine	Proteins	Vaccine	Proteins	Vaccine	Proteins	Vaccine	Proteins/ Polysaccharides
<u>Smallpox</u> *	~200	Smallpox	~200	Diphtheria	1	Diphtheria	1
<b>Total</b>	<b>~200</b>	Diphtheria†	1	Tetanus	1	Tetanus	1
		Tetanus‡	1	WC-Pertussis	~3000	AC-Pertussis¶¶	2–5
		WC-Pertussis§	~3000	Polio	15	Polio	15
		<u>Polio</u>	15	Measles¶¶	10	Measles	10
		<b>Total</b>	<b>~3217</b>	Mumps#	9	Mumps	9
				<u>Rubella</u> **	5	Rubella	5
				<b>Total</b>	<b>~3041</b>	Hib††	2
						Varicella‡‡	69
						Pneumococcus§§	8
						<u>Hepatitis B</u>	1
						<b>Total</b>	<b>123–126</b>

\* *Vaccinia vaccine*: Goebel SJ, Johnson GP, Perkus ME, et al. *Virology*. 1990;179:247–266.

† *Diphtheria toxoid*: MMWR Morb Mortal Wkly Rep. 1991 (August);40:1–28.

‡ *Tetanus toxoid*: MMWR Morb Mortal Wkly Rep. 1991 (August);40:1–28.

§ *Whole cell pertussis vaccine*: Number estimated from genome size. The sequence of Bordetella pertussis Tohama I strain will soon be completed at the Sanger Center in Great Britain.

|| *Polio vaccine*: Wimmer E, Nomoto A. *Biologicals*. 1993;21:349–356; Kitamura N, Semler BL, Rothberg PG, et al. *Nature*. 1981;291:547–553; Five proteins per poliovirus virion and 3 poliovirus strains in the inactivated poliovirus vaccine (IPV).

¶¶ *Measles vaccine*: Griffen D, Bellini WL. Measles virus. In: Fields BN, ed. Knipe DM, Howley PM, et al, eds. Philadelphia, PA: Lipincott-Raven Publishers; 1996.

# *Mumps vaccine*: Elango N, Varsanyi TM, Kovamees J, Norrby E. *J Gen Virol*. 1988;69:2893–2900.

\*\* *Rubella vaccine*. Hofmann J, Gerstenberger S, Lachmann I, et al. *Virus Res*. 2000;68:155–160.

†† *Conjugate Haemophilus influenzae type b vaccine*: MMWR Morb Mortal Wkly Rep. 1991 (January);40:1–7.

‡‡ *Varicella vaccine*: Cohen JL. *Infect Dis Clin North Am*. 1996;10:457–468.

§§ *Streptococcus pneumoniae vaccine*: MMWR Morb Mortal Wkly Rep. 2000;49:1–29.

||| *Hepatitis B vaccine*: MMWR Morb Mortal Wkly Rep. 1991 (November);40:1–25.

¶¶¶ *Acellular pertussis vaccine*: MMWR Morb Mortal Wkly Rep. 1997 (March);46:1–25.

# Number of Immunogenic proteins in vaccines:

- In 1900.....200 proteins
- In 1960.....3217 proteins
- In 1980.....3041 proteins
- And:
- In 2000.....123-126 proteins

# AAP statements on viral antigens given.

- We are exposed to anywhere from 2000-6000 viral antigens daily (air, food, touch)
- How many antigens do we inject in the current vaccine schedule?
- Around **150 antigens**
- We now give more vaccines, using less antigens with more protection.
- So we **are not** overwhelming the immune system.

# Health and Medicine: Violent Metaphor blog: Dr. Jennifer Raff

- They say that Measles isn't a deadly disease
- But **it can be**
- They say that Flu isn't dangerous
- But **it is**
- They say that Whooping cough isn't so bad for kids to get.
- But **it is**

# Dr. Jennifer Raff continued....

- They say that vaccines aren't effective at preventing disease.
- But 3 million children's lives **are saved every year by vaccinations**, and 2 million **die every year from vaccine preventable diseases**.
- They say that “natural infection” is better than vaccination.
- But **they're wrong**.

[www.huffingtonpost.com/jennifer-raff/dear-parents-you-are-being-lied-too](http://www.huffingtonpost.com/jennifer-raff/dear-parents-you-are-being-lied-too)

# Dr. Jennifer Raff continued.....

- They say that vaccines haven't been rigorously tested for safety.
- But vaccines **are subjected to a higher level of scrutiny than any other medicine.**
- They will say that doctors won't admit there are any side effects to vaccines.
- But the side effects are well known, and **except in very rare cases, quite mild.**

## Dr. Jennifer Raff continued....

- They say that if other people's children are vaccinated, there is no need for their children to be vaccinated.
- They are talking about **herd immunity**
- We know that we need at least over 90% immunization rates for this to be plausible.
- Consider the immune deficient patient and possible exposure when talking about herd immunity.

[www.huffingtonpost.com/jennifer-raff/dear-parents-you-are-being-lied-too](http://www.huffingtonpost.com/jennifer-raff/dear-parents-you-are-being-lied-too)

# Dr. Jennifer Raff continued....

- They say that thimerosal in vaccines causes Autism.
- **It doesn't, and it hasn't been in most vaccines since 2001 anyway.**
- They say that Aluminum in vaccines (an adjunct, or component of the vaccine designed to enhance the body's immune response) is harmful to children.
- But children consume more Aluminum in **natural breast milk** than they do **in vaccines**, and far higher levels **are needed to cause harm.**



# Dr. Jennifer Raff continued....

- They say that the MMR vaccine causes Autism.
- **It doesn't.** (The question of whether **vaccines cause autism has been investigated in study after study, and they all show overwhelming evidence** that **they don't.**

[www.huffingtonpost.com/jennifer-raff/dear-parents-you-are-being-lied-too](http://www.huffingtonpost.com/jennifer-raff/dear-parents-you-are-being-lied-too)

# Jenny McCarthy



Amanda Peet.....with AAP



**JENNY MCCARTHY: MY BAD, TURNS OUT MY KID  
DOESN'T HAVE AUTISM**



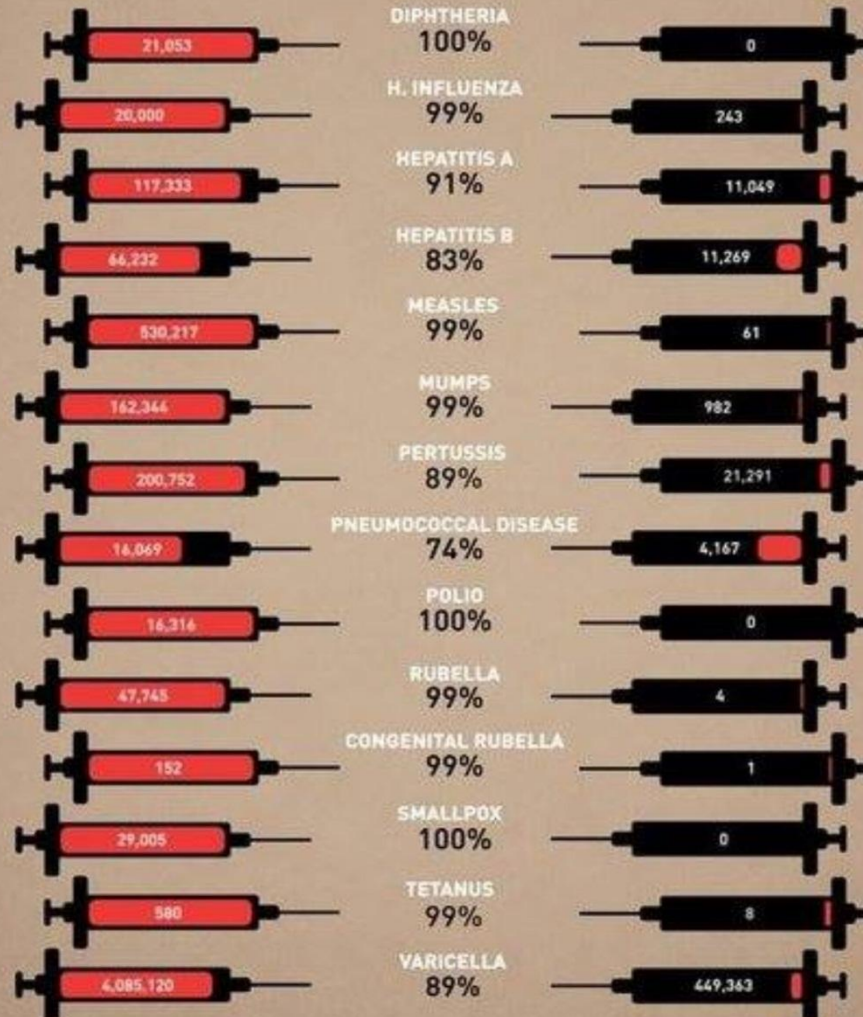


PRE-VACCINE ERA  
ESTIMATED ANNUAL  
MORBIDITY IN THE U.S.

%

MOST RECENT  
REPORTS OF  
CASES IN THE U.S.

DECREASE



INFORMATION COURTESY OF THE CDC JANUARY 2011

# Parents need to know

- Most of us are parents, and have had to make the same decision regarding vaccines.
- We are not becoming millionaires by giving vaccines, some doctors even lose money.
- We base our decision on scientific facts.
- We are witnessing potentially deadly diseases coming back because of refusal to vaccinate.

# In Conclusion:

- Using the car analogy makes it a real, palpable threat for parents. They have to obey all laws when driving a car. They want to make sure their family is safe.
- Just because virus and bacteria are microscopic and we can't see them, it doesn't mean they don't exist. Vaccines will give that protection not just to the one receiving the vaccine, but to us all.





